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PREAMBLE: In this document, the State of New Jersey reluctantly submits recommended revisions to numerous elements in the Proposed Rule, notwithstanding the State's clear conclusion that the Proposed Rule cannot be redeemed through revisions. We provide these recommendations in the expectation that they will assist EPA in developing an entirely new proposal.

The State of New Jersey is also concerned that the very foundation of this Proposed Rule, by proposing widely different goals for various states, encourages conflict among the states instead of bringing the states together to find workable solutions to common challenges.

Finally, it is important for EPA to know that the State of New Jersey has expended a tremendous amount of time and resources preparing its comments to this Proposed Rule. As significant as this expenditure has been, however, the costs of implementing and complying with this Proposed Rule, if it is adopted, will pose an enormous burden on the State, the regulated community, and ultimately the taxpayers of New Jersey.

I. Best System of Emission Reduction

A. EPA should evaluate the merits of a uniform national performance goal

EPA Request for Comment

EPA is requesting "... comment on the proposed BSER, the proposed methodology for computing state goals based on application of the BSER, and the state specific data used in the computations." 79 Fed. Reg. 34835

NJ Recommendation

EPA should evaluate the merits of a straightforward, uniform, rate-based, national performance goal that considers all applicable electric generating units (EGU), as opposed to EPA setting individual, state-specific goals based upon a questionable subset of EGUs and dense and convoluted methodologies for goal setting and compliance credit. A single national goal could achieve the same 30% national emission reduction and be based on a national performance limit in the range of the proposed Section 111(b) standards applied to the collective power sector for each state. Additional time and alternative voluntary strategies for compliance could be provided to states that require the greatest emission reductions.

Justification

1. General

A national performance goal would equitably address past emissions reductions (early action) and could be designed to provide flexibility for achieving compliance. For example, a national performance standard of 1,030 lb/MWh would achieve similar emission reductions sought by EPA under its proposed rule and would appropriately credit past actions and broaden compliance options. As an alternative to a suggested 1,030 lb/MWh standard (calculation details provided below), EPA could apply the proposed Section 111(b) standards to each affected existing unit under Section 111(d), and compute a weighted average based upon a formula to be determined. The national performance goal would be set within the range of 1,000 lb/MWh and 1,100 lb/MWh, using Section 111(b) standards for new coal boilers and natural gas combined cycle power plants (NGCC).¹

2. Early emissions reductions should be counted

In choosing 2012 as a baseline for goal setting and applying the 4 building blocks to each state, the individual state-specific goals established by EPA fail to credit states that have taken early action that served to lessen the carbon intensity from their power sector. In fact, EPA's goal setting methodology actually serves to penalize states that have taken early action. For example, a comparison of New Jersey's power sector emission rates between calendar years 2001 and 2012 illustrates the inequities EPA has imposed.² Table 1 summarizes results for "fossil fuel sources only" and "all fuel sources."

Table 1. Summary of New Jersey's Emission Rates Between 2001 and 2012.

Year	Fossil Fuel Sources Only	All Fuel Sources
2001	1,770 lb/MWh	814 lb/MWh
2012	1,175 lb/MWh	545 lb/MWh
Percent Change (%)	33.6%	33.0%

By arbitrarily choosing 2012 as the baseline year for use with EPA's building blocks, the 33% reductions from New Jersey's "All Fuel Sources" (affecting all 4 building blocks) and "Fossil Source Only" (affecting building blocks 1 and 2) are not recognized and go uncredited.

¹ While New Jersey has not developed a methodology for this approach, EPA could perform a weighted average approach by either using historic unit generation or projected unit generation.

² U.S. Energy Information Administration (EIA). Emission data from "U.S. Electric Power Industry Estimated Emissions by State: 1990-2012;" State Historical Tables EIA-767, EIA-906, EIA-920, and EIA-923, May 2014; <http://www.eia.gov/electricity/data/state/> (accessed May 12, 2014). Electricity generation data from "Net Generation by State by Type of Producer by Energy Source, 1990-2012;" State Historical Tables EIA-906, EIA-920, and EIA-923, May 2014; <http://www.eia.gov/electricity/data/state/> (accessed May 9, 2014).

During this same time horizon (2001 to 2012):

- New Jersey estimates that expenditures for energy efficiency (EE) and renewable energy (RE) reached \$3.27 billion³. These expenditures for EE have an estimated lifetime energy savings of 75 million kWh and 134 million Dtherm of natural gas.⁴ Expenditures for RE have resulted in an estimated 38.6 billion kWh of generation.
- Reliance on coal for in-state power generation has decreased from 15.7% to 2.9%, over an 80% reduction in coal use.⁵
- Reliance on natural gas for in-state power generation has increased from 28% to 43%, enabling reduction of coal and oil use.⁶

An estimated **\$3.27 billion** in combined energy efficiency and renewable energy spending, coupled with New Jersey's criteria pollutant standards, have resulted in a lower reliance on high carbon intensity fossil fuels and explain the emission reductions New Jersey has achieved. In goal setting, EPA must recognize states that have achieved meaningful emissions reductions through early actions. A national performance goal will appropriately recognize early actions. States that will require greater emissions reductions to achieve a uniform national performance goal can be given additional time to comply or alternative means for compliance

3. Cost-effective technology options should be encouraged

EPA clearly recognized the role that NGCC can play in achieving cost-effective emissions reductions through building block 2, which intends to reward a shift from coal and oil-fired fossil generation to natural gas fired power generation.⁷ As summarized above, New Jersey has been shifting fuel sources for some time. For reasons explained in the section below, however, utilization of NGCC in New Jersey beyond the goal setting capacity factor of 44% could actually move New Jersey further

³ RE expenditures includes rebates, estimated cost of New Jersey's Renewable Portfolio Standard (RPS), and estimated costs to ratepayers of net metered renewables.

⁴ New Jersey Board of Public Utilities (NJBP), Clean Energy Program (NJCEP).

⁵ EIA, Form EIA-860, "Annual Electric Generator Report;" EIA, Form EIA-861, "Annual Electric Power Industry Report;" EIA, Form EIA-923, "Power Plant Operations Report" and predecessor forms.

⁶ See footnote 5.

⁷ In deregulated markets, such as in New Jersey, the dispatch of units is determined by economic merit. States can influence dispatch, as New Jersey has done through environmental regulations and energy policy; however, there is no direct causation between a decrease in operations of in-state affected coal and oil-fired units and the increase in operation of in-state affected NGCC. EPA's approach is merely an academic exercise that does not reflect the realistic outcomes of an increased use of NGCC in a state's power sector. EPA must revise how it applies building block 2 in the goal calculation to better reflect likely state outcomes, including the likely effects on affected coal and oil-fired units. See comment I.B.1.a., below.

away from goal compliance (depending upon how EPA accounts for NGCC) and, as a practical matter, adding new NGCC units may not be a viable option for New Jersey to pursue, even though adding NGCC would advance EPA's overarching national emissions reduction goal by displacing higher emitting sources.

According to EPA's *Technical Support Document: Goal Computation*, the national average emission rate for all affected NGCC units is 908 lb/MWh. If EPA adopted a uniform national performance goal of 1,030 lb/MWh, it would allow **ALL** states to use their existing NGCC fleet as a compliance option **and** not just the states with goals higher than 908 lb/MWh

4. Increasing NGCC utilization in New Jersey should be counted for goal compliance

New Jersey's interim and final goals under the rule proposal are 647 lb/MWh and 531 lb/MWh, respectively, while its average existing NGCC emission rate is 889 lb/MWh. Analysis provided by EPA in its application of building block 2 assumes that the affected NGCC fleet is utilized at a capacity factor of 39% and that redispatch at approximately 44% could displace all the coal and oil-fired generation in the state.⁸ While New Jersey expects the recent asymmetric trends in fossil generation to continue with approximately 5% of NGCC capacity equaling its coal and oil-fired generation, due to the higher emission rates of coal and oil-fired generation as compared to NGCC, displacing this remaining coal and oil-fired generation will contribute to compliance with New Jersey's goal, but **only to that nominal degree** because its interim and final emission rate goals are lower than its existing NGCC fleet emission rate. In fact, under EPA's rule proposal, any additional utilization of New Jersey's existing affected NGCC fleet, beyond displacing coal and oil-fired generation, would have to be offset by sources with emission rates lower than the proposed goals.⁹ Consequently, this would lead to discouraging use of additional NGCC, which is contrary to EPA's support for NGCC and the national CO₂ emissions reduction goal, and limits New Jersey compliance options to non-fossil generation. This result holds true for even the most efficient new NGCC units representing the cleanest fossil-fueled generation today.¹⁰

States that have interim and final goals above 908 lb/MWh can benefit from adding NGCC as a cost-effective compliance option, whereas states like New Jersey have their options limited to EE and RE. Significantly, EPA's NODA of October 28, 2014, views RE and EE as displacing NGCC units and coal and oil-fired units, and could result in a reduction of use of existing NGCC in New Jersey by 80%. By

⁸ See footnote 7

⁹ For every MWh of NGCC generation, New Jersey is required to offset it with one MWh of generation with an emission rate of 404 lb/MWh and then 172 lb/MWh, in order to comply with the interim and final goal established by EPA. This will limit compliance options for New Jersey and eliminate the option of more NGCC units for compliance purposes.

¹⁰ Assuming an efficiency of 61%, or heat rate of 5,593 btu/kWh, and a CO₂ emission factor for natural gas of 117.1 lb/mmBtu, the cleanest NGCC unit can achieve an emission rate of 655 lb/MWh, operating as baseload.

adopting a uniform national performance standard of 1,030 lb/MWh, states would be encouraged to fully exploit the use of NGCC.

5. A national performance goal can achieve equivalent or similar emission reduction.

While other approaches should be considered, New Jersey evaluated benefits of a national performance standard and identified a rate of 1,030 lb/MWh as approximating EPA's goals for 2030. Specifically, a standard was developed by: 1) multiplying each states' 2012 affected fossil generation emission rate by its respective 2030 proposed performance goal; 2) summing the results from step 1; 3) dividing step 2 by the sum of 2012 fossil generation. The result represents a weighted average 2030 performance goal based on each state's 2012 fossil share and 2030 proposed goals.

According to EPA's *Technical Support Document: Goal Computation*, the national amount of mass-based carbon emissions from affected EGUs in 2012 equaled 2,152 million tons (MMTCO₂), with an emission rate of 1,647 lb/MWh. By assuming the same share of fossil generation from each state in 2030 and applying the 2030 proposed state-specific goals, the targeted mass-based emission goal from the affected EGUs in 2030 is 1,346 MMTCO₂. When the 2030 national performance goal of 1,030 lb/MWh is multiplied by the total 2012 generation from affected units, a targeted mass-based emission goal of 1,346 MMTCO₂ is achieved, demonstrating equivalency between the EPA proposed 2030 individual state-specific goals and a uniform national performance goal of 1,030 lb/MWh. This goal is within the range of EPA's proposed Section 111(b) new source performance standards for coal boilers and NGCC units, which is appropriate over the long term, as existing units are replaced with new units. While not advocating any specific national performance goal, the establishment of a national performance goal and voluntary, flexible means to achieve such a goal, is far less problematical than EPA's dense and convoluted goal setting and compliance methodologies.

6. Reliability would be improved with a uniform national goal

A uniform national goal would improve the reliability of the electric grid by enabling states like New Jersey to maintain some fuel diversity, which is important for addressing price volatility and weather events. See section I.B.1.a.

B. EPA's BSER is not based on realistic and reasonable outcomes

1. Clean Power Plan Proposed Rule, published June 18, 2014

EPA Request for Comment

EPA "is proposing to finalize the goal for each state as proposed and adjusted as may be appropriate based on comments. A state may demonstrate during the comment period that application of one

of the building blocks to that state would not be expected to produce the level of emission reduction quantified by the EPA because implementation of the building block at the levels envisioned by the EPA was technically infeasible, or because the costs of doing so were significantly higher than projected by EPA. While the EPA would consider this in setting final state goals, the EPA would also consider (and would expect commenters to address) whether a similar overall state goal could still be achieved through more aggressive implementation of one or more of the measures encompassed in the building blocks or through other, comparable measures.... The EPA invites comment on this aspect of the proposal.” 79 Fed. Reg. 34893

NJ Recommendations

While EPA is proposing to finalize goals based on application of BSER, New Jersey submits that the application of the four building blocks do not represent realistic or reasonable outcomes. EPA must revise how it applies buildings blocks in goal setting because it must reflect realistic and reasonable outcomes.

Justification

a. EPA’s BSER may result in the shutdown of all coal and oil-fired units in New Jersey

EPA’s algorithm governing building block 2 results in emission reductions through the displacement of all coal and oil-fired generation with existing NGCC generation in New Jersey. This is not a realistic or reasonable outcome.

In deregulated markets, such as in New Jersey, the dispatch of units is determined by economic merit. States can influence dispatch, as New Jersey has done, through environmental regulations and energy policy; however, there is no direct and automatic correlation between a decrease in operation of in-state affected coal and oil-fired units and the increase in operation of an in-state affected NGCC. EPA’s approach is merely an academic exercise that assumes the affected in-state NGCC will only displace affected in-state coal and oil-fired generation. As EPA defines “affected EGU”, New Jersey’s in-state affected generation comprises approximately 40% of New Jersey’s annual in-state power generation (from only 30% of New Jersey’s electric generating capacity) and dispatch may be provided by a multitude of various source types throughout the PJM region. EPA’s simplistic appraisal and approach to the process of dispatch does not reflect the underlying wholesale market dynamics of a state’s power sector. EPA must revise how it applies building block 2 in goal setting because it must reflect realistic and reasonable outcomes.

Further, EPA must recognize that in order to maintain grid reliability, a minimum level of coal and oil-fired generation must be preserved to avoid potentials for extreme economic consequences and hardship that could occur due to the loss of any one type of fuel supply. As recently as the winter of 2013-2014, the northeast was exposed to a significant period of extreme cold temperatures (polar vortex) and New Jersey would likely have had brownouts and blackouts if not for the remaining coal and oil-fired EGUs. Last winter’s problem occurred because New Jersey is heavily dependent on natural gas for electricity and natural gas is prioritized for heating. EPA’s assumed emissions

reductions from building block 2 would eliminate New Jersey's remaining coal and oil-fired electric generation. New Jersey's remaining coal units are equipped with approximately \$2 billion in air pollution controls and it would be unreasonable for EPA to impose requirements that could lead to calamitous results in New Jersey while allowing higher emitting coal units in many other states to continue operations.

b. EPA's BSER requires a RE share for New Jersey that is not representative of New Jersey's RE Potential

EPA's algorithm governing building block 3 results in an RE share for New Jersey that is not supported by underlying data or proper evaluation. This is not a realistic or a reasonable outcome.

According to the study prepared by the National Renewable Energy Lab (NREL) evaluating individual RE technical potential, relied upon by EPA in its Alternative RE Approach TSD, New Jersey has an RE potential of 0.11%, relative to the nation as a whole.¹¹ Yet under EPA's proposed RE approach to BSER, New Jersey is assumed to generate 2% of the national total of renewable generation, or approximately 18 times its technical potential for in-state renewables.¹² This unbalanced proportion of RE results in an expectation of emission reductions that is unreasonable from both a technical and economic perspective. New Jersey supports renewables through one of the nation's most aggressive RPS and New Jersey has developed more of its in-state solar technical potential than any other state in the nation. EPA, however, improperly relies on a state's RPS to infer both technical and economic potential. Such an approach penalizes states such as New Jersey that have taken early action to develop RE. EPA must take a more pragmatic approach to this building block and evaluate state RE resource potential relative to both costs and environmental factors. EPA's alternative RE approach to building block 3, is an appropriate starting point for EPA to reconsider the RE goal setting procedure.

c. EPA's BSER results in an emission rate goal for existing power plants in New Jersey that is more stringent than EPA is proposing for new power plants

EPA's algorithm that combines all four building blocks provides a state-wide emission rate goal for existing power plants in many states that is more stringent than EPA is proposing for new power plants. This is not a realistic or a reasonable outcome.

GHGs are well-mixed, and take many years to leave the atmosphere. Their effect is long-term and global and, generally speaking, the atmosphere is unconcerned where the CO₂ molecule originated. Therefore, it is appropriate to compare the proposed Section 111(d) statewide goal for existing EGU sources with the proposed Section 111(b) unit standard for new EGU sources. EPA has proposed for state-based CO₂ emission performance interim and final goals of 647 lb/MWh and 531 lb/MWh,

¹¹ See Data File: Renewable Energy (RE) Alternative Approach (XLS) - <http://www2.epa.gov/sites/production/files/2014-06/20140602tsd-proposed-re-alternative-approach.xlsx>

¹² This percentage was calculated through a ratio of New Jersey's BSER Building Block 3 final target to the aggregation of the proposed BSER Building Block 3 final state targets.

respectively. EPA has proposed emission rates for new EGUs ranging from 1,000 lb/MWh /MWh to 1,100 lb/MWh, depending on the type and size of the unit. According to EPA's *Technical Support Document: Goal Computation*, New Jersey's existing EGUs are achieving an emission rate of 1,035 lb/MWh. If the existing EGUs were to be replaced by new EGUs, the fleet would be subjected to a collective emission rate of 1,000 lb/MWh to 1,100 lb/MWh. This is in the range of New Jersey's existing EGUs. It is not reasonable to expect deeper emissions reductions from existing EGUs than what is required from new EGUs. As discussed previously, a uniform national goal in this range could achieve the same 30% CO₂ reduction as EPA projects it will achieve under the rule proposal.

2. EPA did not provide sufficient time to evaluate the Clean Power Plan Proposed Notice of Data Availability (NODA), published Oct. 28, 2014, which could result in shutdown of 80% of NGCC units in New Jersey

EPA Request for Comment

EPA published a Notice of Data Availability ("NODA") on October 28, 2014, outlining an alternative approach to BSER application, similar to the methodology outlined for building block 2. In this alternative approach, incremental EE and RE is required to replace fossil generation. "Together, the approach in the proposal and the alternative approach in this document reflect a range of possible emission rate impacts that could be expected through the application of the incremental RE and EE in the state goal calculation. The EPA is seeking comment on which approach better reflects the BSER." 79 Fed. Reg. 64553

NJ Recommendations

As New Jersey has stated in its legal comments, this rule proposal is more appropriately a pre-proposal, given the many uncertainties contained within the proposal itself and the roughly 200 instances in which EPA requested comments on its proposed approach. With this late publication of the NODA, EPA underscores New Jersey's position that the rule proposal simply leaves too many significant and material terms in doubt for regulated entities to evaluate and provide comments. Given these deficiencies, the rule proposal does not comply with the requirements of the Administrative Procedure Act (APA). EPA should — as it did with standards for new EGUs under Section 111(b) — issue a new proposal with more specificity, so that commenters can actually understand the intricacies of the proposed rule, which are impossible to glean from the current proposal. Additionally, if the proposed rule is adopted as is, it will not only be violative of the APA, but also void for vagueness under the Due Process Clause of the Fifth Amendment. See, e.g., Fed. Cmmc'ns Comm'n v. Fox Television Stations, 132 S. Ct. 2307 (2012). We emphasize again, EPA does not propose a clear method to determine compliance with the proposed goals, which is necessary to understand the proposal and a basic component of any performance standard.

New Jersey offers some initial comments on the NODA but emphasizes that EPA's BSER approach is fundamentally flawed and any alternative approach based upon a flawed approach is also flawed.

Justification

a. EPA's alternative BSER may result in the shutdown of all coal and oil-fired units and up to 80% of NGCC units in New Jersey.

In the alternative methods outlined in the NODA, the underlying goal-setting algorithm governing building blocks 3 and 4 provide emissions reductions through displacement of all of New Jersey's coal and oil-fired generation along with a significant amount of existing NGCC generation.¹³ For the reasons previously identified in the proposed application of building block 2, this is not a realistic or a reasonable outcome.

To highlight the extreme nature of the emissions reductions associated by this alternative goal-setting algorithm, only 6,755,875 kWh is satisfied by the affected fossil EGU generation. This is equivalent to 26% of the generation supplied by the affected fossil EGUs in 2012. All of the coal and oil-fired units would be replaced and the existing NGCC fleet would be operating at a 13% capacity factor. As suggested by EPA, this amount of generation could be satisfied by only 20% of New Jersey's existing NGCC operating at a 70% capacity factor. This could result in the shutdown of many NGCC units in New Jersey, resulting in greater reliance on out-of-state coal units, resulting in higher CO₂ and NO_x emissions. This is not a reasonable outcome.

b. EPA's alternative BSER results in an emission-rate goal for existing power plants in New Jersey that is more stringent than EPA is proposing for new power plants

In the alternative methods outlined in the NODA, the underlying algorithm that combines all four building blocks provides a state-wide emission rate target that is even more stringent than EPA proposed for existing and new power plants. For the reasons previously identified in the proposed combination of all four building blocks, that is not a realistic or reasonable outcome.

To highlight the extreme nature of this final result, New Jersey has calculated a final goal of 336 lb/MWh under this alternative approach, which is significantly more stringent than the 531 lb/MWh final goal set by EPA in the proposed rule. When viewed from a statewide performance perspective, as appropriate with CO₂, EPA is requiring more stringent emission reductions from existing sources than new sources. Specifically, EPA is subjecting existing sources to a standard that is 66% to 69% more stringent than it is proposing for new sources.¹⁴ This is not a reasonable outcome.

¹³ The historic generation of affected fossil EGUs in New Jersey is 25,087,907 kWh. Of this generation, the NGCC share makes up 20,015,730 kWh and coal and oil-fired units make up the remaining 2,776,962 kWh. Under this proposal, building blocks 3 and 4 target an additional 16,036,817 kWh from EE and RE. If this EE and RE generation were to replace the fossil generation under the alternative algorithm, only 6,755,875 kWh of fossil generation would be available for use.

¹⁴ This calculation was completed through use of the following equation: $(1,000 \text{ lb CO}_2/\text{MWh} - 336 \text{ lb CO}_2/\text{MWh}) / 1,000 \text{ lb CO}_2/\text{MWh}$, where x is 1 or 0.

C. EPA did not provide sufficient time to evaluate the Clean Power Plan Proposed Rule Notice; Additional Information Regarding the Translation of Emission Rate-Based CO₂ Goals to Mass-Based Equivalents – Nov. 6, 2014

EPA's Published Notice

On November 6, 2014, EPA published a technical notice that provides substantive and previously undisclosed information necessary for the conversion of state emission rate-based CO₂ goals to mass-based equivalents. Specifically, EPA promulgated this notice “to provide further discussion of potential approaches for translating the emission rate-based carbon dioxide (CO₂) goals that the EPA has proposed for each affected jurisdiction to an equivalent mass-based metric. 79 Fed. Reg. 67406

NJ Recommendations

As New Jersey has stated in its legal comments, this rule proposal is more appropriately a pre-proposal, given the many uncertainties within the proposal itself and the roughly 200 instances in which EPA requested comments on its proposed approach. With this late publication of the “Additional Information Regarding the Translation of Emission Rate-Based CO₂ Goals to Mass-Based Equivalents,” coupled with the recent publication of the NODA, EPA again underscores New Jersey’s position that the rule proposal simply leaves too many significant and material terms in doubt for regulated entities to evaluate and provide comments. Given these deficiencies, the Rule Proposal does not comply with the requirements of the Administrative Procedure Act (APA). EPA should — as it did with standards for new EGUs under section 111(b) — issue a new proposal with more specificity, so that commenters can actually understand the intricacies of the proposed rule, which is impossible to glean from the current proposal. Additionally, if the proposed rule is adopted as is, it will not only be violative of the APA, but also void for vagueness under the Due Process Clause of the Fifth Amendment. See, e.g., Fed. Cmmc’ns Comm’n v. Fox Television Stations, 132 S. Ct. 2307 (2012). We emphasize again, EPA does not propose a clear method to determine compliance with the proposed goals, which is necessary to understand the proposal and a basic component of any performance standard.

II. State Goal Computation

EPA should modify its BSER methodology and adjust goal for New Jersey

EPA Request for Comment

EPA is requesting “. . . comment on the proposed BSER, the proposed methodology for computing state goals based on application of the BSER, and the state specific data used in the computations.” 79 Fed. Reg. 34835

NJ Recommendations

Notwithstanding New Jersey’s recommendation that EPA evaluate the merits of a uniform national performance goal, EPA must at least modify the four building blocks as detailed in the “New Jersey

Corrective Approaches,” provided below. Each Corrective Approach is independently justified and merits an adjustment to New Jersey’s state-specific goal. When combined, these corrections would significantly change the goal for New Jersey.

A. New Jersey Corrective Approach 1: EPA’s assumed redispatch of all coal and oil generation to NGCC must be modified

New Jersey evaluated how the State’s goals would differ if EPA’s assumed redispatch of coal and oil-fired generation to NGCC generation were modified. In the proposal, New Jersey’s goals are based on the assumed redispatch of 100% of the 2012 coal and oil-fired generation from the affected EGUs to NGCC. This approach is fundamentally unsound because a 100% coal and oil-fired generation redispatch resulted in an increase in New Jersey’s NGCC generation capacity from 39% to only 44%, well below EPA’s assumed maximum NGCC utilization level of 70%. Most importantly, EPA’s assumption that all of the coal and oil-fired generation can be redispatched to NGCC is not feasible because a minimum level of coal and oil-fired generation must be preserved in order to maintain grid reliability in the event of insufficient supplies of natural gas, most likely to occur during extreme weather conditions, as experienced during the winter of 2013-2014 and the polar vortex.

New Jersey re-calculated interim (2020–2029) and final (2030 and after) goals if EPA’s unsound assumptions are relaxed (i.e., 100% of the coal and oil-fired generation is unlikely to be redispatched as NGCC). These calculations were performed for both the 2012 base year (EPA proposal) and 2011 base year scenarios. EPA eGRID data for 2011 was downloaded following the instructions provided by the EPA NODA. The affected facility data for this year was used to calculate the interim and final goals for New Jersey using EPA’s methodology provided in the Section 111(d) proposal. With the exception of the base year data, all other aspects of the EPA goal calculation methodology, including the at-risk nuclear, renewable energy, and energy efficiency, were employed.

For the no redispatch 2012 base year scenarios, New Jersey interim and final goals increased to 731 and 600 lb/MWh, respectively. For the no redispatch 2011 base year scenarios, New Jersey interim and final goals increased to 797 and 670 lb/MWh, respectively. Since 100% redispatch of coal and oil-fired generation from affected facilities is unreasonable for New Jersey, the higher 2012 baseline goals of 731 lb/MWh (interim) and 600 lb/MWh (final), at a minimum, should be considered; however, since 2011 was a more typical year for annual coal and oil-fired generation by New Jersey’s affected EGU’s, the higher 2011 baseline goals of 797 lb/MWh (interim) and 670 lb/MWh (final), are more appropriate.

Details regarding the data, assumptions and calculations used to generate the above goals are provided in Excel files. Attached.

-“Summary of NJ Fossil Facilities Goal Evaluations”

-“New_Jersey_2012_2011_base_years_and_redispatch_scenarios_state_goal_data_computation

B. New Jersey Corrective Approach 2: Different base years should be available to states to calculate goals

While EPA uses a single base year to set goals, providing states with flexibility in selecting the average of two years out of five or ten recent years would be consistent with the contemporaneous concept in EPA’s New Source Review rules.

New Jersey conducted an evaluation of the New Jersey interim goal (2020-2029) and final goal (2030 and after) and how these goals would change if a base year other than 2012 were used. The 2012 baseline year chosen by EPA was an atypical year for the operation of New Jersey’s affected EGUs. In 2012, the total generation from New Jersey’s 21 affected EGUs was 25,087,907 MWh, which is significantly lower than the annual generation from these EGUs for the years 2010 and 2011 (27,806,585 and 30,302,427 MWh, respectively). Use of multiple recent base years results is more representative of operations for New Jersey’s affected EGUs and use of such typical years results in more reasonable interim and final goals.

EPA eGRID data for 2010 and 2011 were downloaded following the instructions provided by the EPA NODA. The affected EGU data for these years were used to calculate the interim and final goals for New Jersey using EPA’s methodology provided in the Section 111(d) rule proposal. With the exception of the base year data, all other aspects of the EPA goal calculation methodology, including the at-risk nuclear, renewable energy, and energy efficiency, were employed. The New Jersey interim and final goals increased to 661 and 550 lb/MWh, respectively, for the 2010 base year. The New Jersey interim and final goals increased to 661 and 557 lb/MWh, respectively, for the 2011 base year. If an average of the 2 years were assumed, New Jersey’s goals would be raised to 661 lb/MWh (interim 2020-2029) and 553 lb/MWh (final 2030 and after), which would be more representative of the operation of those facilities than the use of the atypical 2012 values.

Details regarding the data, assumptions and calculations used to generate the above goals are provided in Excel files. Attached.

-“Summary of NJ Fossil Facilities Goal Evaluations”

- “New_Jersey_2010_2011_2012_base_years_state-goal-data-computation”

C. New Jersey Corrective Approach 3: RPS growth rates should be based on retail sales RPS weighted averages and not the simple state averages used by EPA

EPA has calculated individual state RE target levels through a series of steps that start by grouping individual state RPS 2020 percentage targets into regional averages. Each regional average was determined by simply averaging the respective RPS percent generation state targets for that region.

For example, the RE target for the East Central region is calculated as the average of 2020 RPS requirements in Delaware (19%), District of Columbia (20%), Maryland (18%), New Jersey (22%), Ohio (9%), Pennsylvania (8%), Virginia (N/A), and West Virginia (N/A), which is equivalent to 16% (Virginia and West Virginia are excluded from this calculation). These regional percent averages are used in determining a state's RE MWh or, equivalently, its percentage target in Building Block 3.

State RPS requirements are typically determined by multiplying the RPS percentage for a particular year with the retail sales for that same year and, therefore, EPA must amend their methodology by applying a "weighted average" based on state retail sales. Regional RE targets would then be computed consistent with the weighted average RPS targets. The steps of this RE methodology are as follows:

- Step 1: Determine State 2012 retail sales using EIA data;
- Step 2: Multiply State 2020 RPS targets by its 2012 retail sales;
- Step 3: Determine regional RE MWh targets from Step 2;
- Step 4: Determine regional RE percentage targets from Step 3;
- Step 5: Recalculate State RE targets under Building Block 3;
- Step 6: Recalculate State goals.

Under this approach, the Regional Table (useful for Steps 2-4 under EPA's proposed RE approach) has been amended and summarized in Table 2 below:

Table 2 Recalculated "Regional Table (useful for Steps 2-4)" in EPA's Data File: Proposed Renewable Energy (RE) Approach".

Step 2	Step 3	Step 4		
Assigned Region	Regional weighted RE Generation Targets (%)	Calculate Regional RE Target (MWh)	Calculate 2012 Regional RE	Calculate Annual Regional Growth Factor
Alaska	10%	694,642	39,958	11%
East Central	12%	74,470,148	12,162,664	15%
Hawaii	10%	1,046,927	924,815	9%
Northeast	26%	67,904,802	13,749,515	13%
North Central	15%	107,652,463	52,058,236	6%
South Central	20%	150,952,893	53,227,248	8%
Southeast	10%	92,516,967	18,104,807	13%
West	25%	174,492,494	68,065,726	8%

New Jersey's proposed interim goal (2020-2029) and final goal (2030 and after) have been recalculated; 663 lb/MWh and 561 lb/MWh, respectively. Under EPA's Alternative State Goals, New Jersey's interim goal (2020-2024) and final goal (2025 and after) have been recalculated; 731 lb/MWh and 690 lb/MWh, respectively. This corrective approach, combined with the other corrective approaches, should be used by EPA to revise the goals for New Jersey.

Details used to generate the above goals are provided in Excel files. Attached.
"Summary of New Jersey Energy Efficiency and Renewable Energy Goal Evaluations"

D. New Jersey Corrective Approach 4: EPA's Alternative RE Approach

EPA "invites comment on this alternative approach to quantification of RE generation to support BSER".
79 Fed. Reg. 34870

While RE should not be used to set goals, New Jersey supports EPA's alternative RE approach. This approach is a more pragmatic method for determining state RE targets through the use of estimated technical and economic **in-state** RE potential rather than RPS targets. New Jersey has one of the nation's most aggressive RPS that supports renewable generation, not only within the state, but within the entire PJM region. Load serving entities (LSEs) are required to offset the electricity sold in New Jersey from qualifying renewables within the PJM region. Due to the limited technical and economic in-state potential, New Jersey expects that additional future RE required by Section 111(d) must be provided by renewable generation outside the state. Between 2006 and 2010, 75% of the RECs retired for New Jersey's RPS program have come from out-of-state renewables.¹⁵ According to the National Renewable Energy Lab (NREL), RE technical potential identified in EPA's Alternative RE Approach TSD, New Jersey only represents 0.11% of the potential renewable generation in the nation.¹⁶ Yet under EPA's proposed RE approach to BSER using RPS targets to infer RE potential, New Jersey is assumed to generate 2% of the total national renewable generation within the state.¹⁷ This significant difference in BSER can be directly attributed to EPA's reliance on state RPS targets and the assumption that RPS compliance will come entirely from in-state renewable generation. EPA must therefore base New Jersey's goal on the Alternative RE Approach if RE is ultimately used in goal calculations.

¹⁵ *New Jersey's Renewable Portfolio Standard Rule 2010 Annual Report*, prepared by the Office of Clean Energy, NJBPU. http://www.njcleanenergy.com/files/file/Final_2010_Annual_Report_for_New_Jersey_RPS.pdf.

¹⁶ See Data File: Renewable Energy (RE) Alternative Approach (XLS)
<http://www2.epa.gov/sites/production/files/2014-06/20140602tsd-proposed-re-alternative-approach.xlsx>

¹⁷ This percentage is calculated by aggregating the proposed BSER Building Block 3 final state targets and comparing to New Jersey's BSER Building Block final state target.

New Jersey's proposed interim (2020-2029) and final goals (2030 and after) have been recalculated; 724 lb/MWh and 668 lb/MWh, respectively. Under EPA's Alternative State Goals, New Jersey's interim goal (2020-2024) and final goal (2025 and after) have been recalculated; 770 lb/MWh and 747 lb/MWh, respectively.

Details used to generate the above goals are provided in the following attached Excel files. Attached. -"Summary of New Jersey Energy Efficiency and Renewable Energy Goal Evaluations"

E. New Jersey Corrective Approach 5: Use New Jersey's EE Market Potential Assessment Study Approach to establish EE targets instead of EPA's single target for all states

While EE should not be used to set goals for fossil fuel EGUs, adjustment of the EE component is appropriate to accommodate states that have advanced EE programs.

EPA has calculated individual state EE target levels through a series of steps that begin under the assumption that each state can accelerate EE measures to achieve incremental energy savings of 1.5% per year or 1.0% per year under Option 1 and Option 2, respectively ("Best Practice Level of Performance"). EPA starts with the state's current demand side EE performance as reported to EIA, Form 861, assumes that level in 2017, and increases at a pace of 0.2% or 0.15% under Option 1 and Option 2, respectively, for each year, until the Best Practice Level of Performance is achieved. EPA justifies using this uniform standard, "While varied regional characteristics (e.g., avoided power system costs, economic growth, sectoral mix, climate, and level of past energy efficiency efforts) affect estimates of achievable potential, ongoing improvements in energy-efficient technologies and practices, economic growth, population increases, and continually improving strategies for program delivery have resulted in persistent and substantial levels of achievable potential regardless of specific regional characteristics."¹⁸

New Jersey, like other states, develops and implements their EE and RE programs based on statewide market assessments, impact evaluations, or evaluations of other state market assessments in the region. New Jersey has performed the following EE and RE market assessments to assist in developing the NJCEP programs:

1. New Jersey EE and DG Market Assessment
KEMA 2004;
2. New Jersey RE Market Assessment
Navigant 2004;
3. Economic Impact Analysis of New Jersey's Proposed 20% Renewable Portfolio Standard
Rutgers CEEEP 2004;

¹⁸ See GHG Abatement Measures TSD page 5-32

4. EE and RE Market Assessment of NJCEP Summit Blue 2006;
5. Preliminary Review of Alternatives for Transitioning the New Jersey Solar Market from Rebates to Market-based Incentives Summit Blue 2007;
6. Assessment of the New Jersey Renewable Energy Market Summit Blue 2008;
7. Review of EE and RE Market Assessment Rutgers Center for Energy, Economics and Environmental Policy (CEEPP) 2008;
8. New Jersey Biomass Market Assessment Rutgers EcoComplex 2009;
9. Market Assessment Services to Characterize the Opportunity for RE Navigant 2012;
10. Energy Efficiency Market Assessment of NJCEP Enernoc 2012.

These reports are available at <http://www.njcleanenergy.com/main/public-reports-and-library/market-analysis-protocols/market-analysis-baseline-studies/market-an>. Report 1, 2, 3, 9, and 10 are attachments “Kema_Report”, “Navigant_2004_Final_Report”, “Rutgers_2004_RPS_Report”, “Navigant_2012_Final_Report”, “EnerNoc_2012”, respectively.

The executive summary of the KEMA 2004 EE MA report documents a technical potential of 16,999,000 MWh/year in 2020 and an economic potential of 12,832,000 MWh/year in 2020. The technical potential includes all of the EE measures that are technically feasible. The economic potential includes all of the cost effective EE that is technically available. This represented 23% and 17%, respectively, of New Jersey’s electric usage baseline in 2004. The technical and economic potential does not include an assessment of the ratepayer costs. Factoring in the ratepayer costs and rate impacts, the EE potential of what is achievable is 2,831,000 MWh, under the 2004 New Jersey Clean Energy program (NJCEP) funding level, or 5,183,000 MWh, under a more advanced NJCEP funding level. The advanced level was conditioned on increasing EE funding from \$70 million per year in 2004, to \$156 million per year.

The KEMA 2004 EE Market Assessment study results are supported by the recent EnerNoc 2012 EE Market Assessment study. The EnerNoc study was limited to four years from 2013 through 2016; i.e., the next 4 year NJCEP funding cycle. The EnerNoc study found a technical potential of 9,868,00 MWh and an economic potential of 9,369,000 MWh over the 4 year period. This translates into a cumulative achievable level of EE savings, during the four years between 2013 and 2016, of 3.1% under a low potential scenario and 5.9% under a high potential scenario. This represents an annual EE savings between 0.6% to 0.9%, over the New Jersey electricity baseline in a low potential scenario, and between 1.2% to 1.9%, over the New Jersey electricity baseline in a high potential scenario. The actual EE savings achieved by the NJCEP EE programs over the last 13 years, and as reported in 2013, however, have not achieved these modeled EE savings, as projected in the KEMA (2004) or EnerNoc (2012) EE market assessment studies.

Since 2001, NJBPU through the NJCEP has invested over \$1.85 billion for clean energy incentives, of which \$1.319 billion was for EE program incentives. This is an average of \$105 million per year to promote and advance EE in New Jersey. Over the last 5 years, this funding level has increased to an average \$144 million per year for EE incentives. See attached, “2001-2012 (18Mth) Program Results – Final 06172014”, summary of the cost and energy savings for the NJCEP EE and RE program, from 2001 through 2013. This NJCEP cost and energy saving reports for all EE and RE program, as well as all the budgets and program filings, can be viewed at <http://www.njcleanenergy.com/library>.

Despite this significant level of financial support by the New Jersey ratepayers for clean energy, including both EE and RE, New Jersey’s Clean Energy Program has not achieved or approached the annual EE saving level of 1.5%. From 2004 to 2013, the annual energy savings from New Jersey’s Clean Energy Program has ranged from 0.15% to 0.6%. See attached, “2001-2012 (18Mth) Program Results – Final 06172014”. This is, at best, 60% less than the annual EE savings goal set by EPA. It is also significantly less than the estimates set in the NJCEP EE Market Assessment studies, noted above.

Several factors influence the difference between an EE market assessment study potential and the actual EE savings achieved by a program. The economy has a major influence on the implementation of EE programs. These programs are voluntary and ask customers to install equipment that is more efficient than the code requires. Typically, this more efficient equipment is more costly than the equipment required to precisely meet the minimum energy code. Even if a customer can save money over time and pay for the added cost with energy savings over time, it is difficult to ask customers to do more, especially in times of economic downturn. It is not realistic to assume a consistent annual EE savings goal over the next 16 years and not recognize the cyclic nature of these EE programs and the economy.

In addition, the maturity of the EE programs also has a major influence on energy savings. As an established EE program develops, most of the no cost or low cost (low hanging fruit) is exhausted. The remaining EE savings, therefore, becomes more costly to acquire. These programs require more complex administration to address various levels of incentives, financing and tiered rebates. This increases the EE program administration costs and greatly increases the dollars spent relative to the energy saved.

These more complex EE programs require a comprehensive view of an entire facility, as opposed to just providing for single EE equipment rebates, such as for lighting or HVAC equipment. The whole building approach for EE means more energy savings per project or building, but less projects because of the time required to complete a whole building EE upgrade versus just a lighting retrofit. The NJCEP has shifted to these more complex EE programs. This shift results in more complex projects and more savings per project but less annual EE savings. Accordingly, the EPA proposal needs to recognize the difference between relatively new state EE programs and very mature EE programs and, likewise, allow states like New Jersey to demonstrate and include their baseline savings from past years as part of the goal. It is simply not equitable to view a new state EE program the same as a state like New Jersey that has been advancing EE saving for over 30 years without an EPA mandate.

New Jersey's Clean Energy Program for EE and RE is a statewide program administered by the NJBPU. It is not just one or two utility areas or one managed by one or two electric or gas utilities in various franchise areas. It is a statewide electric and natural gas EE and RE program. The EE incentive and rebates offers are the same for Cape May Point (the southernmost point of New Jersey) to High Point (the northern most point of New Jersey). This has an impact on an EE savings that can be achieved in New Jersey versus a state with a new EE program in just one utility franchise area that has a more specific focused approach to address one electric generation plant.

Lastly, the energy building codes also impact savings. In New Jersey's program, as in most EE programs, the energy savings are calculated as the difference between the energy efficiency equipment and the energy building code requirement for that equipment. As the energy building codes improves the energy efficiency that is required to be installed in new and retrofit construction, the energy savings an EE program can claim is getting smaller and smaller. The cost to acquire these savings is also increasing. Some states calculate the energy savings based on the difference between the energy efficient equipment to be installed and the efficiency of the unit it is replacing. However, that requires a more complex measurement and verification method than the deemed energy savings calculation method currently used by the NJCEP and other state EE programs. This increases the program administration costs and reduces the dollars available for EE direct incentives.

EPA must factor in the difference between projected and estimated EE savings and the actual reported savings in mature statewide EE programs. Rather than regulate EE and RE under Section 111(d), the federal government should consider incentives and different regulatory authority to increase EE and RE.

The Best Practice Level of Performance was partly influenced by averaging recent electric EE potential studies, including a recent study conducted on behalf of New Jersey. See attached, "EnerNoc_2012.". This Study identified 0.8% as achievable and, therefore, EPA must adjust Building Block 4 to reflect NJ's achievable electric EE for both Option 1 and Option 2 if EE is to be included in goal determination.

Replicating EPA's methodology for calculating savings target scenarios under Option 1 and Option 2 using 0.8%, New Jersey's Cumulative Annual Electricity Savings (percentage of annual sales) under Option 1 and Option 2, result in 5.95% in 2029 and 3.44% in 2024, respectively.

New Jersey's proposed interim goal (2020-2029) and final goal (2030 and after) have been recalculated; 663 lb/MWh and 560 lb/MWh, respectively. Under EPA's Alternative State Goals, New Jersey's interim goal (2020-2024) and final goal (2025 and after) have been recalculated; 723 lb/MWh and 680 lb/MWh, respectively. This corrective approach, combined with the other corrective approaches, should be used by EPA to revise the goals for New Jersey.

Details used to generate the above goals are provided. See Excel files.

- "Summary of New Jersey Energy Efficiency and Renewable Energy Goal Evaluations"

D. New Jersey Corrective Approach 6: Combination of Corrective Approaches

EPA should evaluate all possible permutations of the Corrective Approaches discussed herein. For illustrative purposes, New Jersey is providing an example of a permutation by combining New Jersey Corrective Approaches 4 and 5.

Under this approach, New Jersey's proposed interim goal (2020-2029) and final goal (2030 and after) have been recalculated; 746 lb/MWh and 715 lb/MWh, respectively. Under EPA's Alternative State Goals, New Jersey's interim goal (2020-2024) and final goal (2025 and after) have been recalculated; 772 lb/MWh and 752 lb/MWh, respectively. This corrective approach, combined with the other corrective approaches, should be used by EPA to revise the goals for New Jersey.

Details used to generate the above goals are provided. See Excel files.

-“Summary of New Jersey Energy Efficiency and Renewable Energy Goal Evaluations”

III. State Compliance Options

A. New NGCC should be treated as a zero-carbon source in a rate-based plan

EPA Request for Comment

EPA “requests comment on how emissions changes under a rate-based plan resulting from substitution of generation by new NGCC for generation by affected EGUs should be calculated toward a required emission performance level for affected EGUs. Specifically, considering the legal structure of CAA section 111(d), should the calculation consider only the emission reductions at affected EGUs, or should the calculation also consider the new emissions added by the new NGCC unit, which is not an affected unit under section 111(d)? Should the emissions from a new NGCC included as an enforceable measure in a mass-based state plan (e.g., in a plan using a portfolio approach) also be considered?” 79 Fed. Reg. 34924

NJ Recommendations

New NGCC MWh of generation must be credited by EPA as a zero-emission generation source because EPA has failed to reconcile its flawed approach in requiring some states to meet more stringent emission limits for existing sources under Section 111(d) than EPA is proposing for new sources under Section 111(b).

Justification

New Jersey maintains that in a rate-based plan, the compliance calculation must consider only the emissions reductions at the affected EGUs that would be replaced or reduced by the operation of a new NGCC unit. New NGCC units are regulated under Section 111(b), New Source Performance Standards, and are not subject to Section 111(d), a program for existing sources. If EPA were to include emissions from a new facility not regulated under Section 111(d) in a rate-based compliance goal, it would undermine and invalidate the goal structure of the rule proposal. EPA acknowledges this as a serious issue by conceding that the Section 111(d) proposal does not currently include new NGCC, and by requesting assistance to resolve this incongruity of rationale. See Section VI, Preamble.

The inclusion of emissions from new NGCC units in compliance calculations would not only be in conflict with Section 111(d), but would place an unreasonable burden on states using a rate-based approach, and also on states like New Jersey that already have a cleaner “affected EGU” sector than the proposed NSPS standards for new NGCC (i.e., 1,000 lb/MWh for larger units and 1,100 lb/MWh for smaller units). Therefore, new NGCC MWh generation must be fully credited and CO₂ emissions should not be factored.

B. All nuclear should be eligible for full compliance credit

Nuclear energy is the largest existing source of carbon free electricity generation in the United States, accounting for 19% of all electricity generation in 2012, and 63% of our nation’s carbon free power, greater than all renewables combined. Nuclear power plants are located in 30 states.

Nuclear power plants are at risk of shut-down, given the historically low cost of natural gas and the increase in construction and operation of natural gas-fueled generation. Such shut-downs would be counterproductive from a greenhouse gas perspective, because other more carbon-intensive generation would need to be dispatched to serve base load.

As an initial matter, we must distinguish EPA’s “goal setting” for each state from “eligible actions” that EPA will allow for reaching these individual state goals.¹⁹ EPA’s goal setting methodology serves to either raise or lower the CO₂ emission ceiling for each state. Eligible actions affect a state’s ability to meet the goal established for it by EPA. The following recommendations distinguish between “goal setting” and “eligible actions” for credit to show compliance with the goal. Recommendations 1 and 2 would provide greatest incentive for maintaining and developing nuclear power. Recommendations 3 to 5 are subsets of recommendations 1 and 2.

¹⁹ Eligible actions have been proposed as actions taken pursuant to a state requirement, program, or measure after the date of the rule proposal. See Preamble section, VIII.F.2.b, or Technical Supporting Document Projecting EGU CO₂ Emission Performance in State Plans.

1. Nuclear Generation as an eligible action, rather than goal setting factor

The proposed rule fails to properly promote, or recognize the importance of, base load nuclear generation for large-scale reductions in CO₂ emissions. Too little CO₂ emissions reduction credit is allowed for nuclear energy in the proposed rule. It is appropriate to provide credit to maintain existing nuclear power, as well as for new nuclear power.

NJ Recommendations

- a. Existing nuclear generation should not be considered in setting a State's emission rate goal, but instead should only be considered as an eligible action for compliance purposes.
- b. Maintaining existing nuclear power should be an eligible action, which receives full credit for reducing the CO₂ emissions intensity (lb/MWh) of a state. This result is warranted under a plain reading of EPA's definition of "affected entity" in proposed definitions at 40 CFR 60.5820.

2. Treatment of new nuclear in setting EPA goals and determining compliance

Three states have new nuclear plants under construction. These plants will not begin operation until after EPA is scheduled to issue the final rule. However, EPA has prematurely included this carbon-free generation in establishing these state goals. EPA's treatment of these new nuclear units has lowered the emission rate goals for each of these states, ignoring the practical difficulties associated with such projects. Also, developing a new nuclear power plant could take about 15 years from inception to operation. Hence, the 2030 deadline for compliance with the CO₂ goal will not likely incentivize any additional nuclear units.

NJ Recommendations

- a. New nuclear generation should be excluded from building block 3 when determining state emission rate goals and instead should only be considered as an eligible action for compliance purposes.
- b. New nuclear generation should remain an eligible action.
- c. Given the long lead time for development and construction of a nuclear generation unit, EPA should consider new nuclear generation as an eligible action if construction has commenced prior to the end of the compliance period. If a nuclear unit or uprate is under construction prior to 2030, the predicted CO₂ reduction or MWh benefits should be credited in 2030, as a way to further promote new nuclear generation.

3. Treatment of existing nuclear generation in setting EPA goals (6% penalty)

EPA's treatment of existing nuclear generation does not fully credit states that have supported the development of one of the most significant forms of carbon-free electricity generation in the United States, nuclear power. Instead, states with existing nuclear capacity are penalized in the calculation of

emission rate goals. Under EPA's approach, states with nuclear power are left with a more stringent emission rate goal relative to states that do not employ nuclear power, thereby limiting states option(s) to demonstrate compliance.

NJ Recommendations

EPA should remove the 6% penalty for "at risk" nuclear generation that is used to set more stringent goals in states with nuclear power

4. Treatment of all uprates for nuclear plants as eligible actions for determining compliance

Utilities have used power uprates as a way to generate more electricity from their nuclear plants. Prior to April 2014, the US Nuclear Regulatory Commission approved 154 power uprates. Owners of these units completed all but 8 of these uprates prior to the end of 2012. These approved uprates resulted in a gain of approximately 7,035 MWe or about the equivalent of seven new reactors.³

NJ Recommendations

EPA should allow 100% credit for uprates that have occurred at nuclear plants in a state, including those uprates that commenced prior to 2012. The date of an uprate should be irrelevant, and all uprates should be considered eligible action, with compliance credit allowed for these significant CO₂ emission reductions.

5. Treatment of nuclear shutdowns

Continued operation of a nuclear plant is contingent on many factors that go well beyond economic consideration. These include safety and local environmental considerations.

NJ Recommendations

If a state chooses to include nuclear generation as an eligible action in compliance determination, the state's plan should address any anticipated shutdown of nuclear generation. In the event that a state has a nuclear plant that closes unexpectedly, the state should be allowed to adjust its plan to account for the closure.

C. All RE and EE should be eligible for compliance credit

Similar to EPA's treatment of nuclear generation, existing RE and EE measures undertaken by states have been included in the calculation of emission rate goals. Under EPA's approach, states that have been early adopters of RE and EE programs are left with more stringent emission rate goals relative to states that have not pursued RE or EE. Consequently, expenditures and emissions reductions associated with implementing these measures go unrecognized. This creates inequity between the states that have pursued RE and EE in relation to those states that have not pursued RE or EE measures.

1. All RE and EE should be considered eligible actions

EPA Request for Comment

The EPA “proposes that emission reductions that existing state requirements, programs and measures achieve during a plan performance period as a result of actions taken after a specified date may be recognized in determining emission performance under a state plan. While proposing that the “specific date” would be the date of proposal of these emission guidelines, the EPA also requests comment on the following alternatives: The state date of the initial plan performance period, the date of promulgation of the emission guidelines, the end of the base period for the EPA’s BSER-based goals analysis (e.g., the beginning of 2013 for blocks 1-3 and beginning of 2017 for block 4, the end-use energy efficiency), the end of 2005, or another date.” 79 Fed. Reg. 34918

NJ Recommendations

- a. Existing renewable generation and energy efficiency should not be used in calculating a State’s emission rate goal but instead should only be considered as an eligible action for compliance purposes.
- b. Existing renewable generation and energy efficiency should be an eligible action, no matter when installed, and receive full credit for reducing the CO₂ emissions intensity (lb /MWh) of a state.

Justification

The NJBPU, through the Office of Clean Energy, has been directly implementing New Jersey’s EE and RE programs since 2003 under the banner of NJCEP. The NJCEP programs and achievement can be viewed at <http://www.njcleanenergy.com/>. Prior to implementing the New Jersey EE and RE programs, the NJBPU has for almost 30 years managed and overseen the EE and RE programs implemented by the New Jersey gas and electric utilities since the mid-80s.

Since 2001, under the New Jersey utility deregulation act of 1999 (New Jersey Electric Discount and Energy Competition Act – EDECA), a societal benefits charge (SBC) has funded EE and RE programs. Since 2001, the SBC budget has provided \$1.85 billion for EE and RE programs. The majority of these expenditures, over 70%, were for EE programs. While the average EE and RE program expenditures averaged \$142 million over the last 13 years, the cost is increasing annually. Last year’s EE and RE expenditures were just under \$200 million, of which 85% was invested under the EE program. The annual expenditures include both program administrative cost and program rebates and incentives. Overall program administrative cost, including program oversight, management, marketing and evaluation, is less than 10%.

New Jersey promotes and advances RE through an RPS for Class I, Class II and solar renewable energy. Because of the vibrancy of the renewable energy certificate (REC) and the Solar REC (SREC) market,

NJCEP has been able to eliminate all solar rebates and provides only limited rebates and incentives for Class I RE and RE storage. The RPS compliance cost from 2004 through 2014 adds another \$1.157 billion to the cost of clean energy in New Jersey. The majority of that cost, between 80 to 85%, is in the solar or SREC program. A REC or SREC is equal to one MWh of electricity produced by the RE customer generator, and includes solar, wind and biomass. The SREC and REC market is managed and verified through the PJM Generator Attributes Tracking System (GATS), developed and established with the assistance of NJBPU. The REC and SREC assist in financing RE project development over time, as opposed to an upfront rebate. This method of incentivizing RE is more cost effective for the New Jersey ratepayer.

While the average expenditure in the RPS program is just under \$116 million per year, that cost is increasing annually. Last year's REC and SREC costs were just over \$327 million, of which \$280 million was from the solar or SREC program. Currently, solar makes up 2% of the electricity used in New Jersey, and through the recently enacted solar RPS, that value will increase to 4% by 2026.

The proposed rule fails to properly recognize the importance of emissions reductions from existing state RE and EE programs. By embedding the existing renewable generation and energy efficiency in the goal setting calculation, EPA has created an inequity between states that have invested in renewables and energy efficiency and those that have not.

2. States with an existing RPS that use EE sources in other states must be given credit for all the emission reductions associated with that generation

EPA Request for Comment

The EPA is "proposing that, for renewable energy measures, consistent with existing state RPS policies, a state could take into account all of the CO₂ emission reductions from renewable energy measures implemented by the state, whether they occur in the state or in other states. This proposed approach for RE acknowledges the existence of renewable energy certificates (REC) that allow for interstate trading of RE attributes and the fact that a given state's RPS requirements often allow for the use of qualifying RE located in another RE located in another state to be used to comply with that state's RPS." 79 Fed. Reg. 34922

NJ Recommendations

While RE should not be used to set goals for fossil fuel-fired power plants, New Jersey supports EPA's proposed approach on the treatment of out-of-state renewable generation used to satisfy a state's RPS. States that purchase RECs should receive 100% credit for the associated environmental attributes.

Justification

RECs represent all the environmental attributes associated with the renewable generation and are the primary mechanism for state RPS compliance. Affected entities, defined by the RPS, acquire RECs to offset a portion of the electricity sold within the State. New Jersey's RPS requires that each supplier

serving retail customers in the state must procure a portion of sales from qualifying renewables. This portion ramps up to 23.85% (3.47% from in-state solar, 17.88% from Class 1, and 2.5% from Class 2) by the year 2021.²⁰ Qualifying renewables generate their energy within or deliver into the PJM region, which is the regional transmission organization responsible for coordinating the movement of wholesale electricity in all or parts of 13 states and the District of Columbia (DC). The cost to implement the New Jersey RPS for energy year 2014 was \$327.172 million, of which \$279.950 million was for solar, \$42.187 million for Class I, and \$5.187 million for Class II. Importantly, the Class I RECs were selling on average at \$6.91/MWh, and the futures market had forecasted a price for a Class I REC as averaging \$16 to \$20/MWh. At that Class I REC price, the cost for the New Jersey RPS program in 2021 could approximate \$250 million; coupled with the estimated cost for solar in 2021, the total New Jersey RPS cost in New Jersey could reach \$1 billion annually. Since the RPS was adopted, New Jersey ratepayers have been funding renewables not only within their state but within the PJM region, specifically for their environmental attributes.

The New Jersey RPS program is significantly dependent on out-of-state renewables. Based on the 2004 New Jersey RE Market Assessment (“Navigant_2004_Final_Report”) performed by Navigant, the technical potential for New Jersey in-state renewables was as follows:

On-shore wind	127 MW
Off-shore wind	2,500 MW
Biomass (other)	177 MW
Landfill gas	64 MW
Wastewater biomass	24 MW
<hr/>	
Total	2,892 MW

The 2012 RE Market Assessment (appendix D) performed by Navigant documented the following New Jersey RE technical potential

On-shore wind	132 MW
Small hydro	126 MW
Wave/tidal	975 MW
Refuel cells	22 MW
<hr/>	
Total	1,255 MW

These assessments document that approximately 10% of the New Jersey RPS could be directly obtained from in-state resources, if all the RE technical potential estimated is cost effective, achievable, and operational by 2021.

²⁰ Class I renewable energy is defined as electricity derived from solar energy, wind energy, wave or tidal action, geothermal energy, landfill gas, anaerobic digestion, fuel cells using renewable fuels, and certain other forms of sustainable biomass. Class II renewable energy is defined as electricity generated by hydropower facilities larger than 3 megawatts (MW) and less than 30 MW, and resource-recovery facilities.

Between 2006 and 2010, 75% of the RECs retired for New Jersey's RPS have come from out-of-state,²¹ documenting the current dependency on out-of-state renewables to meet the New Jersey RPS. Accordingly, states must be allowed to take into account all the emission reductions from renewable energy measures implemented by the state, regardless of location.

New Jersey also recommends that state's be required to use current tracking systems in place for REC generation and tracking, to avoid double counting (e.g., PJM-EIS GATS).²²

D. Programs to reduce methane from leaking gas pipelines should be eligible for compliance credit

NJ Recommendations

EPA should allow compliance credit for measures to reduce the leakage of methane from existing natural gas pipelines. In particular, credit should be allowed for state programs to finance natural gas distribution system upgrades which reduce methane gas leakage.

Justification

In New Jersey, unaccounted natural gas delivered to end-use customers range from 0.5% to 1.72%. See attached, "ETG Dist 2013 Supplemental.pdf"; "NJNG Dist 2013.pdf"; "PSEG Dist 2013"; and "SJG Dist 2013". This presents an opportunity to reduce methane, a potent GHG. Encouraging reductions in methane emissions is beneficial because of the high greenhouse gas potential of methane and the benefits of methane reduction relative to carbon dioxide reduction. See attached, "5-21-14-2I Energy Strong"; "7-23-14-2E ETG Endure"; "7-23-14-2I NJNG Rise"; and "8-20-14-2E SJG Sharp" (providing information on New Jersey's successful program implemented by the four NJ natural gas utilities). These programs require reporting of the methane reductions that are a consequence of the upgrades.

E. Combined heat and power should be eligible for compliance credit

NJ Recommendation

EPA should consider CHP as an effective energy efficiency measure and encourage the use of this highly efficient use of fossil fuel by allowing states to claim efficiency credit.

Justification

Combined heat and power (CHP) is an efficient use of fossil fuel that generates electricity and thermal energy simultaneously. Reaching efficiencies close to 80 percent is not uncommon for CHP at facilities where the demand for thermal energy is high. Reducing the use of a boiler, furnace, or even space

²¹ *New Jersey's Renewable Portfolio Standard Rule 2010 Annual Report*, prepared by the Office of Clean Energy, NJBPU. http://www.njcleanenergy.com/files/file/Final_2010_Annual_Report_for_New_Jersey_RPS.pdf.

²² See PJM-EIS for more information at <http://www.pjm-eis.com/>.

conditioning units presents significant opportunities for emission reductions. In New Jersey, the state's 2011 Energy Master Plan (N.J.S.A 52:27F-14) sets a 1,500 MW goal of CHP capacity.

IV. Enforceability of State Plans

A. EPA Request for Comment

EPA requests comment "on all aspects associated with enforceability of a state plan and how to ensure compliance." 79 Fed. Reg. 34909-34910

EPA requests comment "on what we refer to as a "state commitment approach." This approach differs from the proposed portfolio approach, described above, in one major way: under the state commitment approach, the state requirements for entities other than affected EGUs would not be components of the state plan and therefore would not be federally enforceable. Instead, the state plan would include the enforceable commitment by the state itself to implement state-enforceable (but not federally enforceable) measures that would achieve a specified portion of the required emission performance level on behalf of affected EGUs. The agency requests comment on the appropriateness of this approach." 79 Fed. Reg. 34902

NJ Recommendations

New Jersey supports the "state commitment approach" described by EPA in the proposal. It is not practical for the "outside the fence" measures to be federally enforceable against third parties that implement these measures. EPA's primary enforcement mechanism on these outside the fence measures should be limited to the requirement that a state revise its Section 111(d) plan.

B. EPA Requests for Comment

EPA requests comment "for plans with corrective measures adopted into regulation prior to complete plan submittal,..., whether actual emission performance inferior to projected performance by ten percent is the appropriate trigger for requiring a state to report the reasons for deficient performance and to implement corrective measures. We are also soliciting comment on the range of five to fifteen percent." 79 Fed. Reg. 34907

NJ Recommendations

New Jersey recommends that corrective actions not be adopted into regulation prior to complete plan submittal. This would be a time consuming and needless diversion of limited resources.

C. EPA Requests for Comment

EPA requests comment “for plans without corrective measures adopted into regulation prior to complete plan submittal,..., whether the proposed eight percent performance deviation trigger is appropriate. We also solicit comment on the range of five to ten percent.” 79 Fed. Reg. 34907

New Jersey recommends that the appropriate trigger level for a revised plan is ten percent.

D. EPA Requests for Comment

The EPA is requesting comment “on the appropriate frequency of reporting of the different proposed reporting elements, considering both the goals of minimizing unnecessary burdens on states and ensuring program effectiveness. In particular, the agency requests comment on whether full reports containing all of the report elements should only be required every two years.” 79 Fed. Reg. 34914 And “The EPA is soliciting comment on whether reports should be submitted electronically, to streamline transmission.” 79 Fed. Reg. 34914

And EPA is “seeking comment on the suitability of an approach such as that being used in the electronic state implementation plan submission (eSIPS) pilot program for submittal of state plans under CAA section 111(d).” 79 Fed. Reg. 34917

NJ Recommendations

New Jersey recommends that full reports should only be required every five years; that reports can be submitted electronically, similar to the eSIP electronic submittal pilot program; and that report deadline extensions should be allowed. This is consistent with the precedent set for five year reports for reducing regional haze.

E. EPA Requests for Comment

And” The EPA is requesting comment on other circumstances for which an extension of time would be appropriate. We are also seeking comment on whether some justifications for extension should not be permissible.” 79 Fed. Reg. 34915

NJ Recommendations

States should be able to seek extensions of times whenever an extension can be reasonably justified.

EPA Requests for Comment

“As an alternative to the EPA’s proposed approach of allowing a broad range of RE and demand-side EE measures and programs to be included in state plans, provided that supporting EM&V documentation meets applicable minimum requirements, the EPA is requesting comment on whether guidance should limit consideration to certain well-established programs, such as those characterized in Section V.A.4.2.1 of the State Plan Considerations TSD.” 79 Fed. Reg. 34921

NJ Recommendations

New Jersey recommends that consideration should not be limited to “certain” well-established programs.

V. Miscellaneous

A. Inconsistency in EPA’s review of recent energy efficiency potential studies

The EnerNoc 2012 EE Market Assessment study compared its results to studies from two other states referenced in Appendix 5-1 of EPA's GHG Abatement Measure TSD: Delaware and Pennsylvania. See attached, “EnerNoc_2012.pdf,” chapter 11 page 11-1. In Table 1 “Summary of Recent (2010-2014) Electric Energy Efficiency Potential Studies,” located in Appendix 5-1 of the same document, EPA declares that Delaware and Pennsylvania have reported N/A and 2.9% as achievable average annual projected potential as percentage of baseline sales. However, Chapter 11 “Comparison to recent Regional Potential Studies” of the NJ EE Market Potential Study asserts 0.7% and 0.8% for Delaware and Pennsylvania, respectively. In light of this large discrepancy, New Jersey requests that EPA perform a thorough review of the studies and revise the Best Practice Level of Performance as necessary.

B. Summary of why EPA’s proposal is not BSER

In summary, EPA has not proposed a Section 111(d) regulation that can be considered a “Best System of Emission Reduction (BSER).” The proposal is not BSER for many reasons, which New Jersey highlights, for ease of reference, as follows:

1. The proposal is not practically implementable. The building block format is inconsistent, incomprehensible, and rife with unintended consequences. Creating more complexities in an attempt to cure an ill-conceived rule is not productive. EPA must regroup and create a better system of emission reduction with a direct, logical foundation.

2. The proposal is incomplete. For example, the proposal does not include a clear and workable compliance formula. The gaps in key aspects of the proposal do not allow for meaningful review and comment, and is an insufficient indicator of what in fact EPA might adopt.
3. The “outside the fence” aspects of the proposal will not survive legal challenge. This is a critical flaw because for many states the outside the fence measures are the only way to comply with the proposed EPA goals. Goals that are below the capability of a combined cycle natural gas generating unit cannot be achieved without outside the fence measures.
4. Setting goals for existing units that are more stringent than the goals for new units will not survive legal challenge. The Clean Air Act requires a Section 111(b) standard before there is a Section 111(d) standard, for good reason. The Section 111(b) standard for new units should set a floor for existing units under Section 111 (d). It is simply not reasonable to set standards for existing units that are more stringent than the standard for new units.
5. The proposal sets wildly different targets for each state, varying on a rate basis from a low of 215 lb/MWh to a high of 1783 lb/MWh. On a percentage basis, the targets present power sector reductions that vary from a low of 15% to a high of 73%, which will pit one state against another in commenting on this rule proposal. These numbers are based upon what EPA thinks it knows best about every aspect of every state power generation sector, developing fuel source infrastructure, dispatch, energy markets, energy usage demands of businesses now and in the future, energy usage demands and habits of citizens, and the weather. The inequities of this proposal are clear from the numbers alone. But the basis and background for such numbers are weak and depend upon too many assumptions about too many unknowns.

C. Better Systems of Emission Reduction

Without waiver of objections and comments, New Jersey submits that there are better systems of emission reductions that are more direct, simple, and squarely fit within EPA’s authority under the Clean Air Act. EPA should evaluate:

1. Option 1 – Provide compliance credit for voluntary outside the fence measures
 - (a) Set uniform national performance standard based on the average of all applicable EGUs achieving a single target relative to Section 111(b) NSPS performance limits.
 - (b) Outside the fence measures should be available to states as voluntary, alternative compliance credit for meeting the national standard.

2. Option 2 – Outside the fence measures are eliminated from the rule

- (a) Set uniform national performance standard based on the average of all applicable EGUs achieving a single target relative to the Section 111(b) NSPS performance limits.
- (b) Use the timing flexibility in Section 111(d) to provide varying compliance deadlines which consider the remaining useful life of the existing EGUs in each state.
- (c) Use other regulatory authority of the federal government to require or encourage renewable energy and energy efficiency. EPA need not lump energy efficiency and renewable energy into the regulation of fossil fuel power plants, causing a rule that is not manageable. EPA can follow the auto precedent, where there are separate requirements for EE (MPG) and tailpipe emissions, and incentives for renewables.